and communication they enable. We will also look at the practicalities of each method, and their relative merits and drawbacks and how these can be addressed to maximise their usefulness in refining and improving the translation. **CONCLUSIONS:** We will argue that both methods are beneficial in particular circumstances, and will explore the situations in which each one would be the most appropriate.

PRM67

WHAT EPRO MODALITY IS APPROPRIATE FOR YOUR STUDY?

O'Gorman HJ[1], Ross J[2], Peck R[2], Ross E[2]
[1]Almac Group, Craigavon, UK, [2]Almac Clinical Technologies, Souderton, PA, USA

OBJECTIVES: To help clarify which ePRO modality (IVR, IWR, Handheld) is appropriate for specific studies through providing three examples of diary requirements and appropriate modalities. Emphasize making this decision early in the planning process. **METHODS:** Examples for three scenarios requiring patients to record their PRO data electronically were drawn up based on experience to illustrate how making appropriate modality choices can minimize patient burden and reduce costs. Scenario One - 10,000 patient global vaccine study. Scenario Two – 500 patient global study, daily diary having 40 questions with more than 5 response options. Scenario Three – 50 GI patients to record their PRO data episodically using a VAS scale daily for over a year. **RESULTS:** Scenario One – Appropriate Choice = IVR: It is expensive and logistically challenging for Sponsors to deploy 10,000 PDAs. Using the IVR global network in place would reduce cost and logistics for the Sponsor and sites. Scenario Two – Appropriate Choice = IWR: When patients are provided more than 5 response options in a lengthy questionnaire, an IWR would be better since response options are visual. IWR would be better than PDA given the sample size and logistics. Scenario Three- Appropriate Choice = PDA: A PDA would be most convenient for the patient since they are providing data daily for over a year. PDA is best for VAS scales since the size of the screen can be controlled. **CONCLUSIONS:** There is overlap in deciding which ePRO modality to use for a particular clinical study. It is critical to decide on the modality early when assembling the protocol, so all points can be considered. Looking at the diary requirements (frequency, length, access) for the study will help the Sponsor to decide which modality is best. Reducing patient and site burden will allow for greater compliance.

PRM68

OUTCOME MEASURES HIERARCHY FOR ATTENTION-DEFICIT HYPERACTIVITY DISORDER

Hormaechea-Beldarrain JA[1], Prieto L[2]
[1]Hospital Quiron Bizkaia, Erandio, Spain, [2]London School of Hygiene and Tropical Medicine, London, UK

OBJECTIVES: Attaining good patient health outcomes is the underlying purpose of any health care intervention, including drug therapy. **METHODS:** The outcome measure is the basis for evaluating the quality of health services, and a key element in determining the value of health interventions since the value of health care is defined as outcomes relative to cost. According to Porter (2010), value improvement starts with defining and measuring the total set of outcomes for a medical condition and determining the major risk factors. Porter has provided a challenging framework for identifying the full set of outcomes for any medical condition: the outcome measures hierarchy (OMH). **RESULTS:** According to the OMH the full set of outcomes for any medical condition, and its treatment, can be conveyed in a three-tiered hierarchy. Each tier of the hierarchy contains two broad levels, each of which involves one or more distinct outcome dimensions. Each medical condition should have its own outcome measures. Measurement efforts should begin with at least one outcome dimension at each tier, and ideally at each level. Possible outcome dimensions for Attention-Deficit Hyperactivity Disorder (ADHD) are explored and discussed according to Porter's OMH. ADHD is a frequent neurobehavioral disorder that is characterised by inattention, hyperactivity and impulsivity. ADHD is associated with considerable social, family, behavioural and cognitive dysfunction, and is comorbid to depression, bipolar disorder, anxiety, and drug use. Specific dimensions proposed are aimed at capturing particular aspects of patients affected by ADHD. For each dimension, success is measured with several clinical and patient reported metrics. Tier 1 of the OMH is the patient's health status achieved or retained after a health intervention (clinical or drug therapy). **CONCLUSIONS:** Tier 2 regards the process of recovery and the eventual disutility of the treatment process. Tier 3 concerns the sustainability of health.

PRM69

MEASURING RELATIVE EFFECTIVENESS IN EUROPE: AS IN THE USA, HERE TOO, IT IS TIME TO TURN THE QALY PAGE

Prieto L
European Medicines Agency, London, UK

OBJECTIVES: The recently enacted Patient Protection and Affordable Care Act in the United States of America (USA) has created a Patient-Centered Outcomes Research Institute to conduct comparative effectiveness research, but has prohibited this institute from developing or using cost-per-QALY thresholds. **METHODS:** In reaction to this new legislation some authors, from both continents, have insisted that QALYs provide a convenient yardstick for measuring and comparing health outcomes of varied interventions across diverse diseases and conditions. Such arguments in defense of QALYs are erroneous. While it is true that QALYs are internationally recognized as the standard metric of the value of health outcomes, this acknowledgement is, unfortunately, not deserved. **RESULTS:** The problem lies in the QALY calculation (i.e. Utility x Time). While Time is expressed in a ratio scale with a non-arbitrary zero value, Utility is defined as an interval scale with an arbitrary zero point (i.e. death). Permissible arithmetic operations on interval scales are limited: addition and subtraction are allowed, but multiplication and division are not permitted because the absence of an absolute zero. Consequently, the resulting QALY values are not expressed in the same units as the Time scale, preventing any meaningful conclusion on its application to comparative clinical effectiveness research. **CONCLUSIONS:** Although we do not know the exact reasons why the Patient Protection and Affordable Care Act bans the use of cost per QALY in the USA, the initiative should be celebrated, not criticized, and certainly copied in Europe as well.

Cancer – Clinical Outcomes Studies

PCN1

BURDEN OF HOSPITALIZATION IN PATIENTS WITH ADVANCED LUNG CANCER IN FRANCE AND GERMANY

Lobosco S[1], Taylor-Stokes G[1], Iyer S[2]
[1]Adelphi Real World, Cheshire, UK, [2]Pfizer, New York, NY, USA

OBJECTIVES: To assess the burden of hospitalization in advanced lung cancer patients in France and Germany. **METHODS:** Oncologists (N=80) and pulmonologists (N=40) actively involved in management of Non small cell lung cancer (NSCLC) in France and Germany were invited to participate in a lung cancer disease specific program. Each consenting physician was asked to complete patient record forms for the next 10 advanced (stage IIIB/IV) lung cancer patients seen in their practice. The study period extended from July to October 2010. Data on hospitalization over the past year was provided by the physicians using the patient chart records. The primary reason of hospitalization and the length of stay (LOS) were reported. **RESULTS:** Majority of the patients (N=1213) were male (68%), Caucasian (92%), Stage IV (89%), currently on first line therapy (51%) with an average age of 63 years. Hospitalization records were obtained for 93% (n=1133) of the patients among which 30% (n=341) of the patients had one or more hospitalization events in the previous year with an average (SD) LOS of 10 (8) days. The primary cause reported for the 449 hospitalization events were disease symptoms (44%), surgery (20%) and therapy side effects (17%). The LOS for surgery related hospitalization (n=89) ranged from 1-20 days (mean: 8 days). Among patients hospitalized for disease symptoms (n=197) the most frequently reported primary causes were dyspnea (23%), cough (10%) and pain (11%) with average LOS of 13, 12 and 8 days respectively. Among patients hospitalized for side effects (n=75), anemia (24%), febrile neutropenia (8%), febrile aplasia (8%) were most frequently reported with average LOS of 4 days. **CONCLUSIONS:** Burden of hospitalization due to disease symptoms and treatment related side effects is significant in France and Germany. Innovative therapies effective in alleviation of symptoms and side effects could help significantly in decreasing hospitalization costs.

PCN2

A RETROSPECTIVE LONGITUDINAL STUDY OF TREATMENT PATTERNS AND OUTCOMES AMONG PATIENTS WITH UNRESECTABLE STAGE IIIC/IV MELANOMA IN CANADA (MELODY)

Osenenko K[1], Szabo SM[1], Schultz M[2], Mihalcioiu C[3], Lane S[1], Levy AR[1]
[1]Oxford Outcomes Ltd., Vancouver, BC, Canada, [2]Bristol-Myers Squibb Canada, Montreal, QC, Canada, [3]McGill University, Montreal, QC, Canada

OBJECTIVES: Unresectable metastatic melanoma patients (stages IIIc/IV) have a poor prognosis. Recent improvements in survival have been attributed in part to earlier detection and investigational therapies, however melanoma is considered incurable if it becomes metastatic. No information about treatment patterns for unresectable melanoma in Canada has been published. Objectives of this study were to describe disease characteristics, treatment patterns, health outcomes, and resource utilization for Canadian unresectable melanoma patients treated outside randomized clinical trials [RCT]. **METHODS:** Charts of melanoma patients at seven Canadian centres were screened for eligibility. Unresectable melanoma charts then selected consecutively in reverse chronological order from January 2009 until target number (n=250) exceeded. Data on patient and disease characteristics, treatments (across three lines), adverse event management, health outcomes and resource utilization were then extracted from charts of patients with at least two months of follow-up, from diagnosis until censoring (June 2010 or death). **RESULTS:** Of 1426 melanoma patient charts reviewed, 262 (18%) were for unresectable melanoma patients, 16% (43/262) of which were first diagnosed in an advanced stage. Overall, 10% (26/262) participated in an RCT during the follow-up period and 60% (156/262) received systemic therapy outside an RCT. In the latter group, responsiveness to therapy was low; only 20% (26/132) on first-line and 16% (9/58) on second-line therapy experienced complete or partial response. On first-line therapy, 40% (53/132) experienced adverse events requiring medical management and 18% (24/132) were hospitalized during treatment; corresponding figures for second-line were 38% (22/58) and 24% (14/58) respectively. **CONCLUSIONS:** This study characterizes treatment patterns and provides quantitative estimates of resource utilization for unresectable melanoma patients across Canada. Extant systemic treatments are associated with poor response and considerable resource utilization. This study quantifies the grim prognosis faced by advanced melanoma patients in Canada receiving currently available treatments.

PCN3

CETUXIMAB FOR THE FIRST-LINE TREATMENT OF METASTATIC COLORECTAL CANCER

Ubago R[1], Castillo MA[1], Flores S[2], Rodriguez R[1], Beltran C[1]
[1]Agencia de Evaluación de Tecnologías Sanitarias de Andalucía, Seville, Andalucia, Spain, [2]Andalusian Agency for Health and Technology Assessment, Seville, Andalucia, Spain

OBJECTIVES: To evaluate the efficacy and safety of cetuximab in combination with chemotherapy vs. chemotherapy alone for the first-line treatment of metastatic colorectal cancer (mCRC), in patients with KRAS wild-type tumours. **METHODS:**

Two systematic reviews of literature have been conducted. One focused on the efficacy, identifying health technology agencies reports, meta-analysis, systematic reviews, and randomized controlled trials (RCTs). The safety systematic review included the previous designs plus observational studies. In the latter review, studies in subsequent lines of treatment were considered. Searches were done in MEDLINE, EMBASE, CRD, and the Cochrane Library until the 8th of June. The quality assessment of the studies was done with the SIGN and CASPe tools. Two authors independently selected the studies, assessed the quality, and performed the data extraction, with disagreements resolved by a third reviewer until consensus was obtained. **RESULTS:** In the efficacy systematic review, three RCTs were included. The chemotherapy in one of these trials was FOLFIRI, in another trial FOLFOX-4, and in the other one was oxaliplatin and fluoropyrimidine chemotherapy. In the safety systematic review, five RCTs (3 studies in first-line, one study in second-line and another with cetuximab in monotherapy in subsequent lines), and an observational study were considered. Cetuximab in combination with FOLFIRI improved overall survival (OS), resection rate, progression free survival (PFS) and overall tumour response rate (RR). Whereas, an increase in terms of OS was not observed with cetuximab in combination with oxaliplatin based regimen, and different results were obtained in PFS. The only benefit observed with the later regimen was in the RR. In terms of safety, cetuximab increased grade 3 or 4 skin toxicity. **CONCLUSIONS:** The benefit of the addition of cetuximab to standard therapy for previously untreated mCRC, KRAS wild-type patients differs depending on the chemotherapy associated, with an improvement in all the outcomes when FOLFIRI is used.

PCN4

EFFECT OF ANTIEMETIC PROPHYLAXIS AGAINST CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING WITH 5-HT3 RECEPTOR ANTAGONISTS IN PATIENTS WITH LYMPHOMA

Lin SJ[1], Hatoum HT[2], Balu S[3]
[1]*University of Illinois at Chicago, College of Pharmacy, Chicago, IL, USA,* [2]*Hind T. Hatoum & Company, Chicago, IL, USA,* [3]*Eisai, Inc., Woodcliff Lake, NJ, USA*

OBJECTIVES: 5-hydroxytryptamine3 receptor antagonists (5-HT3 RAs) are used for prophylaxis of chemotherapy-induced nausea and vomiting (CINV). This study compared the risk of severe CINV associated with hospitalization or emergency room admission among patients with lymphoma initiated and maintained on palonosetron versus the other 5-HT3 RAs (granisetron, ondansetron, and dolasetron). **METHODS:** Adult patients diagnosed with lymphoma and treated with cyclophosphamide were selected from PharMetrics claims data (2005-2009). Other inclusion criteria were continuous patient enrollment for at least ≥6 months before the initial diagnosis and receipt of 5-HT3 RA for CINV prevention on the day of cyclophosphamide treatment (index date). CINV was identified by ICD-9-CM claims for nausea, vomiting, and/or dehydration. Risk of CINV during the follow-up period of 6 months from index date was assessed using multiple regression models, controlling for age, gender, Charlson Comorbidity Index (CCI), and total dose of cyclophosphamide. **RESULTS:** A total of 2609 patients were studied. Palonosetron patients (n=979; 37.5%) were older than the other 5-HT3 RAs (62.1 ± 13.6 vs. 59.0 ± 14.1 years, p<0.0001), with similar CCI and gender. During follow-up, palonosetron patients received more cyclophosphamide dose in significantly fewer CT days (+586 mg; p=0.0005 and -0.73 days, both p<0.0001), and had fewer patients experiencing unadjusted severe CINV (7.3% vs. 10.4%, p=0.007) as compared to the other 5-HT3 RA patients. Multiple regressions found that palonosetron group (versus the other 5-HT3 RA group) experienced fewer CINV claims (0.47 less; p=0.0253), fewer CINV days (48% less; p=0.0006), and a 34% lower severe CINV risk (Odds Ratio=0.66; p=0.006). **CONCLUSIONS:** Patients in palonosetron group received higher CT dose within fewer CT days and experienced significantly lower risk for potentially costly CINV events than patients on other 5-HT3-RA-based antiemetic prophylaxis. Further studies on the clinical and economic impact of the choice of 5-HT3-RA for CINV prophylaxis in patients with lymphoma are needed.

PCN5

REDUCED RISK OF CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING IN PATIENTS WITH CANCER TREATED WITH HIGHLY EMETOGENIC CHEMOTHERAPY AND ANTIEMETIC PROPHYLAXIS WITH PALONOSETRON

Schwartzberg L[1], Jackson J[2], Jain G[2], Balu S[3]
[1]*Accelerated Community Oncology Research Network, Memphis, TN, USA,* [2]*Xcenda, LLC., Palm Harbor, FL, USA,* [3]*Eisai, Inc., Woodcliff Lake, NJ, USA*

OBJECTIVES: Palonosetron, dolasetron, granisetron, and ondansetron [5-HT3 receptor antagonists (5-HT3-RAs)] are indicated to prevent chemotherapy-induced nausea and vomiting (CINV). This study assessed the risk of uncontrolled CINV following antiemetic prophylaxis with palonosetron + dexamethasone (group 1) versus any of the other 5-HT3-RAs + dexamethasone (group 2) among single-day HEC cycles in cancer diagnosed patients. **METHODS:** Single-day HEC cycles (a gap of at least 5 days between 2 administrations) among patients with a cancer diagnosis and initiating antiemetic prophylaxis with group 1 versus group 2 between June 1, 2006 to June 30, 2010 were identified from the IMS LifeLink claims database. Uncontrolled CINV events were defined as nausea, vomiting, or dehydration ICD-9-CM codes, hydration CPT codes, rescue medications, and/or use of antiemetic therapy from days 2-5 post-HEC administration. Risk for an uncontrolled CINV event was analyzed at cycle level using a logistic multivariate regression model controlling for key variables. **RESULTS:** A total of 67,873 group 1 and 26,540 group 2 cycles (17,272 and 7,365 patients, respectively) were analyzed. Groups 1 and 2 were similar in age [mean (sd): 55.0 (12.3) vs. 55.3 (12.6) years; p=0.1502], Charlson comorbidity score [6.2 (3.2) vs. 6.2 (3.2); p=0.7949], and female distribution (74.7% vs. 73.7%; p=0.0893). Versus group 2, group 1 patients had a higher percent of breast cancer (45.0% vs. 42.2%; p<0.0001) and a lower percent of lymph/hematologic malignancies (11.6% vs. 13.4%; p=0.0002). Group 1 cycles had a significantly lower unadjusted risk of an uncontrolled CINV event (14.1% vs. 15.4%; p<0.0001), while the regression analysis predicted a 10% lower risk for group 1 cycles [Odds Ratio: 0.90 (95% CI: 0.86 – 0.93); p<0.0001]. **CONCLUSIONS:** In this retrospective claims data analysis, patients with cancer receiving single-day HEC cycles and group 1 prophylaxis for CINV had a lower risk for an uncontrolled CINV event versus group 2 prophylaxis.

PCN6

IMPACT OF 5-HT3 RECEPTOR ANTAGONIST SELECTION WITHIN TRIPLE ANTIEMETIC REGIMENS ON THE RISK OF UNCONTROLLED CHEMOTHERAPY-INDUCED NAUSEA IN PATIENTS WITH CANCER TREATED WITH HIGHLY EMETOGENIC CHEMOTHERAPY

Schwartzberg L[1], Jackson J[2], Jain G[2], Balu S[3]
[1]*Accelerated Community Oncology Research Network, Memphis, TN, USA,* [2]*Xcenda, LLC., Palm Harbor, FL, USA,* [3]*Eisai, Inc., Woodcliff Lake, NJ, USA*

OBJECTIVES: Palonosetron, dolasetron, granisetron, and ondansetron [5-HT3 receptor antagonists (5-HT3-RAs)] are indicated to prevent chemotherapy-induced nausea and vomiting (CINV). This study assessed the risk of uncontrolled CINV following antiemetic prophylaxis with palonosetron + dexamethasone (group 1) versus any of the other 5-HT3-RAs + dexamethasone (group 2) among single-day HEC cycles in cancer diagnosed patients. **METHODS:** Single-day HEC cycles (a gap of at least 5 days between 2 administrations) among patients with a cancer diagnosis and initiating antiemetic prophylaxis with group 1 versus group 2 between June 1, 2006 to June 30, 2010 were identified from the IMS LifeLink claims database. Uncontrolled CINV events were defined as nausea, vomiting, or dehydration ICD-9-CM codes, hydration CPT codes, rescue medications, and/or use of antiemetic therapy from days 2-5 post-HEC administration. Risk for an uncontrolled CINV event was analyzed at cycle level using a logistic multivariate regression model controlling for key variables. **RESULTS:** A total of 67,873 group 1 and 26,540 group 2 cycles (17,272 and 7,365 patients, respectively) were analyzed. Groups 1 and 2 were similar in age [mean (sd): 55.0 (12.3) vs. 55.3 (12.6) years; p=0.1502], Charlson comorbidity score [6.2 (3.2) vs. 6.2 (3.2); p=0.7949], and female distribution (74.7% vs. 73.7%; p=0.0893). Versus group 2, group 1 patients had a higher percent of breast cancer (45.0% vs. 42.2%; p<0.0001) and a lower percent of lymph/hematologic malignancies (11.6% vs. 13.4%; p=0.0002). Group 1 cycles had a significantly lower unadjusted risk of an uncontrolled CINV event (14.1% vs. 15.4%; p<0.0001), while the regression analysis predicted a 10% lower risk for group 1 cycles [Odds Ratio: 0.90 (95% CI: 0.86 – 0.93); p<0.0001]. **CONCLUSIONS:** In this retrospective claims data analysis, patients with cancer receiving single-day HEC cycles and group 1 prophylaxis for CINV had a lower risk for an uncontrolled CINV event versus group 2 prophylaxis.

PCN7

THE INCIDENCE AND OUTCOME OF FEBRILE NEUTROPENIA IN DIFFERENT CHEMOTHERAPY REGIMENS FOR CANCER PATIENTS IN BELGIUM

Chevalier P[1], Lamotte M[2], Malfait M[3], Marciniak A[4]
[1]*IMS Health, Vilvoorde, Belgium,* [2]*IMS Consulting Group, Vilvoorde, Belgium,* [3]*AmGen sa/nv, Brussels, Belgium,* [4]*Amgen Ltd, Uxbridge, UK*

OBJECTIVES: The incidence of febrile neutropenia (FN) depends on the cancer type and the chemotherapy regimen used. In Belgium, reimbursement of granulocyte-colony stimulating factors (G-CSF) in primary prophylaxis against FN is limited to 4 indications. This study aimed to provide real-life information on the incidence and impact of FN in chemotherapy-cancer combinations excluded from G-CSF primary prophylaxis reimbursement. **METHODS:** Based on ICD-9 code and drug name all chemotherapy-cancer combinations with at least one patient having an ICD-9 code corresponding to neutropenia (288.0) and/or fever (780.6) and where G-CSF primary prophylaxis was not reimbursed, were retrieved from the IMS Hospital Disease database for the period 2005-2008. This database includes longitudinal (per calendar year) information on diagnoses and drugs prescribed in about 34% of all Belgian hospital beds. Incidence of FN (cases of FN with chemo-cancer combination divided by total number of patients with this chemo-cancer combination), mortality in patients with and without FN and impact of FN on subsequent chemotherapy treatment decisions were assessed. **RESULTS:** Among the 25,544 patients at risk, 3,191 (13%) had at least one FN episode. Highest incidence rates were found in combinations of cisplatin-containing regimens with head and neck (71/287, 25%), stomach (24/110, 22%) and esophagus (36/202, 18%) cancers, lung cancers treated with cisplatin-etoposide (52/292, 18%) or carboplatin-etoposide (102/659, 16%) regimen and multiple myeloma treated with doxorubicin-vincristine regimen (26/152, 17%). Overall, 50% of first FN episodes occurred during cycle 1. Of the 3191 FN patients 11% died, 24% switched chemotherapy regimen and 22% stopped treatment during the cycle with FN. FN occurred subsequently in 27% of 1367 patients continuing the same regimen. **CONCLUSIONS:** This study suggests clinically significant FN-incidence is associated with chemotherapy regimens where G-CSF primary prophylaxis is not reimbursed in Belgium, which may lead to negative outcomes in terms of mortality and treatment disruption.

PCN8

INCIDENCE, PREDICTIVE FACTORS, AND INFECTION COMPLICATIONS OF PROLONGED NEUTROPENIA IN R-CHOP/CHOP TREATED DIFFUSE LARGE B-CELL LYMPHOMA PATIENTS

Zhou KR[1], Kei KM[1], Ng HM[1], Wong RS[2]
[1]*The Chinese University of Hong Kong, Shatin, N.T., Hong Kong,* [2]*Prince of Wales Hospital, Shatin, N.T., Hong Kong*